

Revision: ----	Document Code: WI- ML- 6437	Document Title: Operating Instructions for Nanodrop-N200 Spectrophotometer	 دانشگاه گیلان و خدا بختی و درانی آستان خدا والسلام و برکت
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1. Purpose

To define the procedures for the operation, maintenance, and calibration of the NanoDrop spectrophotometer.

2. Scope of Operation

NanoDrop spectrophotometers are primarily used to measure the concentration of nucleic acids (DNA/RNA) and proteins. The system utilizes surface tension to retain the sample between two optical fibers. This technology allows for the measurement of highly concentrated samples without the need for dilution. By utilizing this technology, full-spectrum NanoDrop spectrometers (190–840 nm) can measure sample concentrations up to 200 times higher than those measured using standard cuvettes.

3. Responsibility

The implementation of this procedure is the responsibility of the designated laboratory personnel.

4. Operational Procedure

1. Ensure the device is connected to a power source and turn the power switch ON.
2. In the software interface, select the appropriate measurement option based on your sample type.
3. Raise the sampling arm and clean the measurement pedestals (upper and lower) with distilled water and a lint-free, soft, dry cloth.
4. Pipette 3–5 μL of the sample solvent or blank solution onto the lower pedestal, select **OK**, and perform a blank measurement to calibrate/zero the device.
5. **Technical Note:** The receiving optical fiber is integrated into the sensor. Upon closing the arm, the second fiber (source fiber) contacts the liquid sample, creating a liquid column between the two fiber ends. The light source is a pulsed Xenon lamp, and a spectrometer (using a CCD linear array) analyzes the light passing through the sample.
6. After blanking, wipe the pedestal clean, pipette 3–5 μL of the target sample onto the sensor surface, and select **Measure**.
7. Immediately after each measurement, clean the sensor surface with a lint-free, soft, dry cloth to prevent residue buildup, which can cause cloudiness and significantly reduce measurement accuracy.
8. Upon completing all measurements, thoroughly clean the sensor surfaces with a lint-free, soft, dry cloth.
9. Power off the device and cover it with the protective dust cover.

5. Safety Instructions

- The device must be connected to a voltage stabilizer.
- Always wear gloves when handling extracted samples.
- Dispose of all consumables in a designated sharps container or treat them with 10% bleach solution.

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۶. Maintenance

- Keep the device away from direct sunlight and high-traffic laboratory areas.
- After each use, ensure the optical pedestals are cleaned with distilled water and a lint-free cloth.
- Do not move or relocate the device while it is powered on.
- Always use the protective cover when the device is not in use.

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